

THE ASTROPHYSICAL JOURNAL
CONTENTS OF VOLUME 620, PART 1

2005 FEBRUARY 10, NUMBER 1

	Page
TESTING COSMOLOGICAL MODELS AND UNDERSTANDING COSMOLOGICAL PARAMETER DETERMINATIONS WITH METAPARAMETERS © <i>Mike Chu & Lloyd Knox</i>	1
ACCELERATING UNIVERSE FROM GRAVITATIONAL LEAKAGE INTO EXTRA DIMENSIONS: TESTING WITH TYPE Ia SUPERNOVAE © <i>Zong-Hong Zhu & Jailson S. Alcaniz</i>	7
THE EFFECT OF TYPE Ib/c CONTAMINATION IN COSMOLOGICAL SUPERNOVA SAMPLES <i>N. L. Homeier</i>	12
SHOCK-HEATED GAS IN THE LARGE-SCALE STRUCTURE OF THE UNIVERSE © <i>Hyesung Kang, Dongsu Ryu, Renyue Cen, & Doojong Song</i>	21
THE STRÖMGREN SPHERE, THE ENVIRONMENT, AND THE REIONIZATION IN THE LOCAL UNIVERSE OF THE HIGHEST REDSHIFT QSOs <i>Qingjuan Yu & Youjun Lu</i>	31
EFFICIENCY OF NONLINEAR PARTICLE ACCELERATION AT COSMIC STRUCTURE SHOCKS © <i>Hyesung Kang & T. W. Jones</i>	44
SPIN, ACCRETION, AND THE COSMOLOGICAL GROWTH OF SUPERMASSIVE BLACK HOLES <i>Stuart L. Shapiro</i>	59
THE DISTRIBUTION AND COSMIC EVOLUTION OF MASSIVE BLACK HOLE SPINS <i>Marta Volonteri, Piero Madau, Eliot Quataert, & Martin J. Rees</i>	69
EVOLUTION SINCE $z = 1$ OF THE MORPHOLOGY-DENSITY RELATION FOR GALAXIES <i>Graham P. Smith, Tommaso Treu, Richard S. Ellis, Sean M. Moran, & Alan Dressler</i>	78
THE DISCOVERY OF A HIGH-REDSHIFT X-RAY-EMITTING QSO VERY CLOSE TO THE NUCLEUS OF NGC 7319 <i>Pasquale Giallani, E. M. Burbidge, H. Arp, V. Junkkarinen, G. Burbidge, & Stefano Zibetti</i>	88
THE HOT INTERGALACTIC MEDIUM—GALAXY CONNECTION: TWO STRONG O VI ABSORBERS IN THE SIGHT LINE TOWARD PG 1211+143 <i>Jason Tumlinson, J. Michael Shull, Mark L. Giroux, & John T. Stocke</i>	95
A CHANDRA SNAPSHOT SURVEY OF INFRARED-BRIGHT LINERS: A POSSIBLE LINK BETWEEN STAR FORMATION, ACTIVE GALACTIC NUCLEUS FUELING, AND MASS ACCRETION <i>R. P. Dudik, S. Satyapal, M. Gliozzi, & R. M. Sambruna</i>	113
COMPARISON OF RADIO OBSERVATIONS AND NUMERICAL SIMULATIONS OF THE RADIO LOBES OF CYGNUS A <i>Joel C. Carvalho, Ruth A. Daly, Matthew P. Mory, & Christopher P. O'Dea</i>	126
EMERGENCE OF A NARROW H ₂ O MASER FEATURE IN NGC 1052 <i>Seiji Kamenoi, Naomasa Nakai, Satoko Sawada-Sato, Naoko Sato, & Arisa Haba</i>	145
PROBING THE DUST OBSCURATION IN SEYFERT GALAXIES USING INFRARED SPECTROSCOPY. II. IMPLICATION FOR THE UNIFICATION OF SEYFERT GALAXIES <i>Joseph H. Rhee & James E. Larkin</i>	151
THE IONIZED NUCLEAR ENVIRONMENT IN NGC 985 AS SEEN BY CHANDRA AND BeppoSAX © <i>Y. Krongold, F. Nicastro, M. Elvis, N. S. Brickhouse, S. Mathur, & A. Zezas</i>	165
SUPERSOLAR N/C IN THE NARROW-LINE SEYFERT 1 GALAXY MARKARIAN 1044 <i>Dale L. Fields, Smita Mathur, Richard W. Pogge, Fabrizio Nicastro, & Stefanie Komossa</i>	183
A TWO-FLUID THERMALLY STABLE COOLING FLOW MODEL © <i>Renyue Cen</i>	191
FORMATION OF NUCLEAR SPIRALS IN BARRED GALAXIES <i>H. B. Ann & Parijat Thakur</i>	197

	Page
SULFUR CHEMISTRY AND ISOTOPIC RATIOS IN THE STARBURST GALAXY NGC 253 <i>S. Martin, J. Martin-Pintado, R. Mauersberger, C. Henkel, & S. García-Burillo</i>	210
ON THE EXTREME STATIONARY OUTFLOWS FROM SUPER STAR CLUSTERS: FROM SUPERWINDS TO SUPERNEBULAE AND FURTHER MASSIVE STAR FORMATION <i>Guillermo Tenorio-Tagle, Sergiy Silich, Ary Rodríguez-González, & Casiana Muñoz-Tuñón</i>	217
INVESTIGATING THE POSSIBLE ANOMALY BETWEEN NEBULAR AND STELLAR OXYGEN ABUNDANCES IN THE DWARF IRREGULAR GALAXY WLM <i>Henry Lee, Evan D. Skillman, & Kim A. Venn</i>	223
WHICH GLOBULAR CLUSTERS CONTAIN INTERMEDIATE-MASS BLACK HOLES? © <i>Holger Baumgardt, Junichiro Makino, & Piet Hut</i>	238
DIFFRACTIVE INTERACTION AND SCALING VIOLATION IN $pp \rightarrow \pi^0$ INTERACTION AND GeV EXCESS IN GALACTIC DIFFUSE GAMMA-RAY SPECTRUM OF EGRET <i>Tuneyoshi Kamae, Toshinori Abe, & Tatsumi Koi</i>	244
THE OH (1720 MHz) SUPERNOVA REMNANT MASERS IN W28: MERLIN AND VLBA POLARIZATION OBSERVATIONS <i>Ian M. Hoffman, W. M. Goss, C. L. Brogan, & M. J. Claussen</i>	257
STUDY OF THE GALACTIC INTERSTELLAR MEDIUM FROM HIGH-RESOLUTION X-RAY SPECTROSCOPY: X-RAY ABSORPTION FINE STRUCTURE AND ABUNDANCES OF O, Mg, Si, S, AND Fe <i>Yoshihiro Ueda, Kazuhisa Mitsuda, Hiroshi Murakami, & Kyoko Matsushita</i>	274
THE NATURE OF THE MOLECULAR ENVIRONMENT WITHIN 5 PARSECS OF THE GALACTIC CENTER <i>Robeson M. Herrnstein & Paul T. P. Ho</i>	287
DEUTERATED THIOFORMALDEHYDE IN THE BARNARD 1 CLOUD <i>N. Marcelino, J. Cernicharo, E. Roueff, M. Gerin, & R. Mauersberger</i>	308
THREE-DIMENSIONAL PHOTOIONIZATION STRUCTURE AND DISTANCES OF PLANETARY NEBULAE. II. MENZEL 1 <i>Hektor Monteiro, Hugo E. Schwarz, Ruth Gruenwald, Katherine Guenther, & Steve R. Heathcote</i>	321
MOLECULAR EVOLUTION IN COLLAPSING PRESTELLAR CORES. III. CONTRACTION OF A BONNOR-EBERT SPHERE <i>Yuri Aikawa, Eric Herbst, Helen Roberts, & Paola Caselli</i>	330
SEARCH FOR 17 μm H ₂ PURE ROTATIONAL EMISSION FROM CIRCUMSTELLAR DISKS <i>S. Sako, T. Yamashita, H. Kataza, T. Miyata, Y. K. Okamoto, M. Honda, T. Fujiyoshi, & T. Onaka</i>	347
A UNIFIED JET MODEL OF X-RAY FLASHES, X-RAY-RICH GAMMA-RAY BURSTS, AND GAMMA-RAY BURSTS. I. POWER-LAW-SHAPED UNIVERSAL AND TOP-HAT-SHAPED VARIABLE OPENING ANGLE JET MODELS © <i>D. Q. Lamb, T. Q. Donaghy, & C. Graziani</i>	355
THE X-RAY AFTERGLOW OF DARK GRB 970815: A COMMON ORIGIN FOR GAMMA-RAY BURSTS AND X-RAY FLASHES? <i>N. Mirabal, J. P. Halpern, E. V. Gotthelf, & R. Mukherjee</i>	379
MAPPING INSPIRAL RATES ON POPULATION SYNTHESIS PARAMETERS <i>R. O'Shaughnessy, V. Kalogera, & K. Belezynski</i>	385
DISKS SURVIVING THE RADIATION PRESSURE OF RADIO PULSARS © <i>K. Yavuz Eksi & M. Ali Alpar</i>	390
REVEALING THE FOCUSED COMPANION WIND IN CYGNUS X-1 WITH CHANDRA <i>J. M. Miller, P. Wojdowski, N. S. Schulz, H. L. Marshall, A. C. Fabian, R. A. Remillard, R. Wijnands, & W. H. G. Lewin</i>	398
MASSSES, PARALLAX, AND RELATIVISTIC TIMING OF THE PSR J1713+0747 BINARY SYSTEM <i>Eric M. Splaver, David J. Nice, Ingrid H. Stairs, Andrea N. Lommen, & Donald C. Backer</i>	405
IRREGULAR MASS TRANSFER IN THE POLARS VV PUPPIS AND V393 PAVONIS DURING THE LOW STATE <i>Dirk Pandel & France A. Córdova</i>	416
UNRAVELING THE PUZZLE OF THE ECLIPSING POLAR SDSS J015543.40+002807.2 WITH XMM AND OPTICAL PHOTOMETRY/SPECTROPOLARIMETRY <i>Gary D. Schmidt, Paula Szkody, Lee Homer, Paul S. Smith, Bing Chen, Arne Henden, Jan-Erik Solheim, Michael A. Wolfe, & Robert Greimel</i>	422
PENETRATIVE CONVECTION WITHIN THE ANELASTIC APPROXIMATION <i>Tamara M. Rogers & Gary A. Glatzmaier</i>	432
THE ABSORPTION SPECTRUM OF HIGH-DENSITY STELLAR EJECTA IN THE LINE OF SIGHT TO η CARINAE <i>T. R. Gull, G. Vieira, F. Bruhweiler, K. E. Nielsen, E. Verner, & A. Danks</i>	442
HIGH-RESOLUTION MID-INFRARED IMAGING OF THE ASYMPTOTIC GIANT BRANCH STAR RV BOOTIS WITH THE STEWARD OBSERVATORY ADAPTIVE OPTICS SYSTEM © <i>B. A. Biller, L. M. Close, A. Li, J. H. Bieging, W. F. Hoffmann, P. M. Hinz, D. Miller, G. Brusa, M. Lloyd-Hart, F. Wildi, D. Potter, & B. D. Oppenheimer</i>	450
STREAMING INSTABILITIES IN PROTOPLANETARY DISKS <i>Andrew N. Youdin & Jeremy Goodman</i>	459

CONTENTS

v

Page

RESOLVING THE INNER CAVITY OF THE HD 100546 DISK: A CANDIDATE YOUNG PLANETARY SYSTEM? <i>C. A. Grady, B. Woodgate, S. R. Heap, C. Bowers, J. A. Nuth III, G. J. Herczeg, & H. G. M. Hill</i>	470
THE N2K CONSORTIUM. I. A HOT SATURN PLANET ORBITING HD 88133 © <i>Debra A. Fischer, Greg Laughlin, Paul Butler, Geoff Marcy, John Johnson, Greg Henry, Jeff Valenti, Steve Vogt, Mark Ammons, Sarah Robinson, Greg Spear, Jay Strader, Peter Driscoll, Abby Fuller, Teresa Johnson, Elizabeth Manrao, Chris McCarthy, Melesio Muñoz, K. L. Tah, Jason Wright, Shigeru Ida, Bun'ei Sato, Eri Toyota, & Dante Minniti</i>	481
THE AGE DEPENDENCE OF THE DETECTABILITY OF COMETS ORBITING SOLAR-TYPE STARS <i>M. Jura</i>	487
SUBMILLIMETER IMAGES OF A DUSTY KUIPER BELT AROUND η CORVI <i>M. C. Wyatt, J. S. Greaves, W. R. F. Dent, & I. M. Coulson</i>	492
COMPARISON OF INTERPLANETARY CME CHARGE STATE COMPOSITION WITH CME-ASSOCIATED FLARE MAGNITUDE <i>A. Reinard</i>	501
EVIDENCE FOR RESONANT TRANSITION RADIATION IN DECIMETRIC CONTINUUM SOLAR BURSTS © <i>Gregory D. Fleishman, Gelu M. Nita, & Dale E. Gary</i>	506
FEATURE EXTRACTION TECHNIQUES FOR THE ANALYSIS OF SPECTRAL POLARIZATION PROFILES <i>H. Socas-Navarro</i>	517
UVCS OBSERVATION OF SUNGRAZER C/2001 C2: POSSIBLE COMET FRAGMENTATION AND PLASMA-DUST INTERACTIONS <i>A. Bemporad, G. Poletto, J. C. Raymond, D. A. Biesecker, B. Marsden, P. Lamy, Y.-K. Ko, & M. Uzzo</i>	523
FINE-STRUCTURE EXCITATION OF C ⁺ AND Si ⁺ BY ATOMIC HYDROGEN <i>Girts Barinouts, Marc C. van Hemert, Roman Krems, & Alexander Dalgarno</i>	537
THE REACTIONS OF H AND D ATOMS WITH THIN FILMS OF FORMALDEHYDE AND METHANOL AT CRYOGENIC TEMPERATURES <i>Kenzo Hiraoka, Akira Wada, Hidekazu Kitagawa, Masato Kamo, Hayato Unagiike, Toshiyuki Ueno, Takaaki Sugimoto, Taeko Enoura, Norihito Sogoshi, & Shigemitsu Okazaki</i>	542
2005 FEBRUARY 20, NUMBER 2	
WAS THE UNIVERSE REIONIZED AT REDSHIFT 10? © <i>Abraham Loeb, Rennan Barkana, & Lars Hernquist</i>	553
CORRECTING FOR THE ALIAS EFFECT WHEN MEASURING THE POWER SPECTRUM USING A FAST FOURIER TRANSFORM <i>Y. P. Jing</i>	559
THE LUMINOSITY, STELLAR MASS, AND NUMBER DENSITY EVOLUTION OF FIELD GALAXIES OF KNOWN MORPHOLOGY FROM $z = 0.5$ TO 3 <i>Christopher J. Conselice, Jeffrey A. Blackburne, & Casey Papovich</i>	564
THE PHOENIX DEEP SURVEY: THE CLUSTERING AND ENVIRONMENT OF EXTREMELY RED OBJECTS <i>Antonis Georgakakis, J. Alfonso, A. M. Hopkins, M. Sullivan, B. Mobasher, & L. E. Cram</i>	584
THE DEEP GROTH STRIP GALAXY REDSHIFT SURVEY. III. REDSHIFT CATALOG AND PROPERTIES OF GALAXIES © <i>Benjamin J. Weiner, Andrew C. Phillips, S. M. Faber, Christopher N. A. Willmer, Nicole P. Vogt, Luc Simard, Karl Gebhardt, Myunghsin Im, D. C. Koo, Vicki L. Sarajedini, Katherine L. Wu, Duncan A. Forbes, Caryl Gronwall, Edward J. Groth, G. D. Illingworth, R. G. Kron, Jason Rhodes, A. S. Szalay, & M. Takamiya</i>	595
THE LUMINOSITY FUNCTION OF VOID GALAXIES IN THE SLOAN DIGITAL SKY SURVEY <i>Fiona Hoyle, Randall R. Rojas, Michael S. Vogeley, & Jon Brinkmann</i>	618
PARTIALLY OBSCURED QUASARS IN THE SLOAN DIGITAL SKY SURVEY EARLY DATA RELEASE <i>Xiao-Bo Dong, Hong-Yan Zhou, Ting-Gui Wang, Jun-Xian Wang, Cheng Li, & You-Yuan Zhou</i>	629
MODELING THE 3C 120 RADIO JET FROM 1 TO 30 MILLIARCSECONDS © <i>P. E. Hardee, R. C. Walker, & J. L. Gómez</i>	646
X-RAY/ULTRAVIOLET CAMPAIGN ON THE Mrk 279 AGN OUTFLOW: CONSTRAINING INHOMOGENEOUS ABSORBER MODELS © <i>Nahum Arav, Jelle Kaastra, Gerard A. Kriss, Kirk T. Korista, Jack Gabel, & Daniel Proga</i>	665
ROTATING MOLECULAR GAS ASSOCIATED WITH A SILHOUETTE DISK AT THE CENTER OF THE RADIO GALAXY 3C 31 <i>T. Okuda, K. Kohno, S. Iguchi, & K. Nakanishi</i>	673
INTERMEDIATE-ELEMENT ABUNDANCES IN GALAXY CLUSTERS © <i>W. H. Baumgartner, M. Loewenstein, D. J. Horner, & R. F. Mushotzky</i>	680

	Page
THE NATURE OF BLUE CORES IN SPHEROIDS: A POSSIBLE CONNECTION WITH ACTIVE GALACTIC NUCLEI AND STAR FORMATION ©	697
<i>Felipe Menanteau, André R. Martel, Paolo Tozzi, Brenda Frye, Holland C. Ford, Leopoldo Infante, Narciso Benítez, Gaspar Galaz, Daniel Coe, Garth D. Illingworth, George F. Hartig, & Marc Clampin</i>	
ABUNDANCE PROFILES AND KINEMATICS OF DAMPED $\text{Ly}\alpha$ ABSORBING GALAXIES AT $z < 0.65$	703
<i>Hsiao-Wen Chen, Robert C. Kennicutt, Jr., & Michael Rauch</i>	
DISCOVERY OF AN X-RAY NOVA IN M31	723
<i>Benjamin F. Williams, Michael R. Garcia, Albert K. H. Kong, Frank A. Primini, & Stephen S. Murray</i>	
SPITZER IRAC OBSERVATIONS OF STAR FORMATION IN N159 IN THE LARGE MAGELLANIC CLOUD ©	731
<i>Terry J. Jones, Charles E. Woodward, Martha L. Boyer, Robert D. Gehrz, & Elisha Polomski</i>	
STELLAR ORBITS AROUND THE GALACTIC CENTER BLACK HOLE	744
<i>A. M. Ghez, S. Salim, S. D. Hornstein, A. Tanner, J. R. Lu, M. Morris, E. E. Becklin, & G. Duchêne</i>	
DETECTION OF WATER IN THE SHOCKED GAS ASSOCIATED WITH IC 443: CONSTRAINTS ON SHOCK MODELS	758
<i>R. L. Snell, D. Hollenbach, J. E. Howe, D. A. Neufeld, M. J. Kaufman, G. J. Melnick, E. A. Bergin, & Z. Wang</i>	
THE PROMINENT DUST EMISSION FEATURE NEAR $8.9 \mu\text{m}$ IN FOUR H II REGIONS	774
<i>E. Peeters, A. G. G. M. Tielens, A. C. A. Boogert, T. L. Hayward, & L. J. Allamandola</i>	
QUIESCENT AND COHERENT CORES FROM GRAVOTURBULENT FRAGMENTATION	786
<i>Ralf S. Klessen, Javier Ballesteros-Paredes, Enrique Vázquez-Semadeni, & Carolina Durán-Rojas</i>	
MOLECULAR ABUNDANCE RATIOS AS A TRACER OF ACCELERATED COLLAPSE IN REGIONS OF HIGH-MASS STAR FORMATION	795
<i>C. J. Lintott, S. Viti, J. M. C. Rawlings, D. A. Williams, T. W. Hartquist, P. Caselli, I. Zinchenko, & P. Myers</i>	
MOLECULAR LINE PROFILE FITTING WITH ANALYTIC RADIATIVE TRANSFER MODELS	800
<i>Christopher H. De Vries & Philip C. Myers</i>	
DISCOVERY OF MULTISEEDED MULTIMODE FORMATION OF EMBEDDED CLUSTERS IN THE ROSETTE MOLECULAR COMPLEX ©	816
<i>Jin Zeng Li & Michael D. Smith</i>	
A PRE-PROTOSTELLAR CORE IN L1551	823
<i>Jonathan J. Swift, William J. Welch, & James Di Francesco</i>	
A POSSIBLE ORIGIN OF BIMODAL DISTRIBUTION OF GAMMA-RAY BURSTS	835
<i>Kenji Toma, Ryo Yamazaki, & Takashi Nakamura</i>	
SUPERNOVA SIMULATIONS WITH BOLTZMANN NEUTRINO TRANSPORT: A COMPARISON OF METHODS ©	840
<i>M. Liebendörfer, M. Rampp, H.-Th. Janka, & A. Mezzacappa</i>	
VISCOSITY AND ROTATION IN CORE-COLLAPSE SUPERNOVAE	861
<i>Todd A. Thompson, Eliot Quataert, & Adam Burrows</i>	
MAGNETICALLY DRIVEN ACCRETION IN THE KERR METRIC. III. UNBOUND OUTFLOWS	878
<i>Jean-Pierre De Villiers, John F. Hawley, Julian H. Krolik, & Shigenobu Hirose</i>	
FORCE-FREE MAGNETOSPHERE OF AN ACCRETION DISK-BLACK HOLE SYSTEM. II. KERR GEOMETRY	889
<i>Dmitri A. Uzdensky</i>	
AN ACCRETION-JET MODEL FOR BLACK HOLE BINARIES: INTERPRETING THE SPECTRAL AND TIMING FEATURES OF XTE J1118+480 ©	905
<i>Feng Yuan, Wei Cui, & Ramesh Narayan</i>	
STRUCTURE OF THE ELECTROSPHERES OF BARE STRANGE STARS	915
<i>V. V. Usov, T. Harko, & K. S. Cheng</i>	
X-RAY VARIABILITY DURING THE QUIESCENT STATE OF THE NEUTRON STAR X-RAY TRANSIENT IN THE GLOBULAR CLUSTER NGC 6440 ©	922
<i>Edward M. Cackett, Rudy Wijnands, Craig O. Heinke, Peter D. Edmonds, Walter H. G. Lewin, David Pooley, Jonathan E. Grindlay, Peter G. Jonker, & Jon M. Miller</i>	
XMM-NEWTON AND OPTICAL FOLLOW-UP OBSERVATIONS OF THREE NEW POLARS FROM THE SLOAN DIGITAL SKY SURVEY	929
<i>Lee Homer, Paula Szkody, Bing Chen, Arne Henden, Gary D. Schmidt, Oliver J. Fraser, Karla Saloma, Nicole M. Silvestri, Hilda Taylor, & J. Brinkmann</i>	
CHANDRA OBSERVATIONS OF THE RECURRENT NOVA IM NORMAE	938
<i>Marina Orio, Emre Tepedelenlioglu, Sumner Starrfield, Charles E. Woodward, & Massimo Della Valle</i>	
DISKLIKE STRUCTURE IN THE SEMIREGULAR PULSATING STAR X HERCULIS	943
<i>Jun-ichi Nakashima</i>	
A STARFISH PREPLANETARY NEBULA: IRAS 19024+0044 ©	948
<i>Raghuvendra Sahai, Carmen Sánchez Contreras, & Mark Morris</i>	

	Page
DIAMETERS OF MIRA STARS MEASURED SIMULTANEOUSLY IN THE <i>J</i> , <i>H</i> , AND <i>K'</i> NEAR-INFRARED BANDS © <i>R. Millan-Gabet, E. Pedretti, J. D. Monnier, F. P. Schloerb, W. A. Traub, N. P. Carleton, M. G. Lacasse, & D. Segransan</i>	961
A ROBUST MEASURE OF TIDAL CIRCULARIZATION IN COEVAL BINARY POPULATIONS: THE SOLAR-TYPE SPECTROSCOPIC BINARY POPULATION IN THE OPEN CLUSTER M35 <i>Soren Meibom & Robert D. Mathieu</i>	970
A YOUNG BROWN DWARF COMPANION TO DH TAURI <i>Yoichi Itoh, Masahiko Hayashi, Motohide Tamura, Takashi Tsuji, Yumiko Oasa, Misato Fukagawa, Saeko S. Hayashi, Takahiro Naoi, Miki Ishii, Satoshi Mayama, Jun-ichi Morino, Takuya Yamashita, Tae-Soo Pyo, Takayuki Nishikawa, Tomonori Usuda, Koji Murakawa, Hiroshi Suto, Shin Oya, Naruhisa Takato, Hiroyasu Ando, Shoken M. Miyama, Naoto Kobayashi, & Norio Kaifu</i>	984
CONDENSATION FRONT MIGRATION IN A PROTOPLANETARY NEBULA <i>Sanford S. Davis</i>	991
RADIAL VELOCITY DETECTABILITY OF LOW-MASS EXTRASOLAR PLANETS IN CLOSE ORBITS <i>Raman Narayan, Andrew Cumming, & D. N. C. Lin</i>	1002
DECAY OF PLANETARY DEBRIS DISKS <i>G. H. Rieke, K. Y. L. Su, J. A. Stansberry, D. Trilling, G. Bryden, J. Muzerolle, B. White, N. Gorlova, E. T. Young, C. A. Beichman, K. R. Stapelfeldt, & D. C. Hines</i>	1010
STICKY ICE GRAINS AID PLANET FORMATION: UNUSUAL PROPERTIES OF CRYOGENIC WATER ICE <i>H. Wang, R. C. Bell, M. J. Iedema, A. A. Tsekouras, & J. P. Cowin</i>	1027
A METHOD FOR THE DETECTION OF PLANETARY TRANSITS IN LARGE TIME SERIES DATA SETS <i>David T. F. Weldrake & Penny D. Sackett</i>	1033
AN ABSENCE OF HOT JUPITER PLANETS IN 47 TUCANAE: RESULTS OF A WIDE-FIELD TRANSIT SEARCH <i>David T. F. Weldrake, Penny D. Sackett, Terry J. Bridges, & Kenneth C. Freeman</i>	1043
MODELING THE SHOCK AFTERMATH SOURCE OF ENERGETIC PARTICLES IN THE SOLAR CORONA <i>Leon Kocharov, Marianna Lytova, Rami Vainio, Timo Laitinen, & Jarmo Torsti</i>	1052
A STATISTICAL STUDY OF THE CORRELATION BETWEEN MAGNETIC HELICITY INJECTION AND SOFT X-RAY ACTIVITY IN SOLAR ACTIVE REGIONS <i>T. Maeshiro, K. Kusano, T. Yokoyama, & T. Sakurai</i>	1069
MAGNETIC RECONNECTION RATE AND FLUX-ROPE ACCELERATION OF TWO-RIBBON FLARES <i>Ju Jing, Jiong Qiu, Jun Lin, Ming Qu, Yan Xu, & Haimin Wang</i>	1085
THE X3 FLARE OF 2002 JULY 15 <i>Jing Li, D. L. Mickey, & B. J. LaBonte</i>	1092
OBSERVATIONS OF H α INTENSITY OSCILLATIONS IN A FLARE RIBBON <i>R. T. James McAttee, Peter T. Gallagher, Daniel S. Brown, D. Shaun Bloomfield, Ruth Moore, David R. Williams, Mihalis Mathioudakis, A. Katsiyannis, & Francis P. Keenan</i>	1101
THE ACOUSTIC SHOWERGLASS. I. SEISMIC DIAGNOSTICS OF PHOTOSPHERIC MAGNETIC FIELDS <i>Charles Lindsey & D. C. Braun</i>	1107
THE ACOUSTIC SHOWERGLASS. II. IMAGING ACTIVE REGION SUBPHOTOSPHERES <i>Charles Lindsey & D. C. Braun</i>	1118
PRECISION LIMITS TO EMISSION-LINE PROFILE MEASURING EXPERIMENTS <i>J. Ireland</i>	1132
THE STRENGTHS OF NEAR-INFRARED ABSORPTION FEATURES RELEVANT TO INTERSTELLAR AND PLANETARY ICES <i>P. A. Gerakines, J. J. Bray, A. Davis, & C. R. Richey</i>	1140



